

## CLAIMS:

1. A combinatorial chemistry process, in which a material is vaporised from each of at least two sources and deposited on a single substrate, the path of the vaporised material from each source to the substrate being partially interrupted by an associated mask, the positioning of the mask in a plane parallel to the plane defined by the substrate being such that the material is deposited on the substrate in a thickness which increases substantially continuously in a direction along the substrate, and where a further plane is defined by the centres of the source associated with that mask and the substrate and intersecting an edge of the mask, the mask being so positioned that its intersection with the further plane lies within the boundaries defined by the intersection of the surface of the source with the further plane and the lines in the further plane joining each edge of the source with the opposite edge of the substrate, each mask being closer to its associated source than to the substrate, and each mask being moveable but not being moved in the course of the deposition process.
2. A combinatorial chemistry process, in which a material is vaporised from each of at least two sources and deposited on a single substrate, the path of the vaporised material from the source to the substrate being partially interrupted by an associated mask, the positioning of the mask in a plane parallel to the plane defined by the substrate being such that the material is deposited on the substrate in a thickness which increases substantially continuously in a direction along the substrate, and where the edge of the mask intersecting the further plane is within the area defined by  $H_1$ ,  $H_2$ ,  $C_2$  and  $C_1$  of Figure 2 of the accompanying drawings, each mask being closer to its associated source than to the substrate, and each mask being moveable but not being moved in the course of the deposition process.
3. A process according to Claim 2, in which the edge of the mask intersecting the further plane is within the area defined by  $H$ ,  $C_2$  and  $C_1$ .

## CLAIMS:

1. A ~~vapour deposition~~ combinatorial chemistry process, in which a material is vaporised from a ~~source~~ each of at least two sources and deposited on a single substrate, the path of the vaporised material from ~~the~~ each source to the substrate being partially interrupted by an associated mask, the positioning of the mask in a plane parallel to the plane defined by the substrate being such that the material is deposited on the substrate in a thickness which increases substantially continuously in a direction along the substrate, and where a further plane is defined by the centres of the source associated with that mask and the substrate and intersecting an edge of the mask, the mask being so positioned that its intersection with the further plane lies within the boundaries defined by the intersection of the surface of the source with the further plane and the lines in the further plane joining each edge of the source with the opposite edge of the substrate. each mask being closer to its associated source than to the substrate. 2. A ~~vapour~~ and each mask being moveable but not being moved in the course of the deposition process.
2. A combinatorial chemistry process, in which a material is vaporised from a ~~source~~ each of at least two sources and deposited on a single substrate, the path of the vaporised material from the source to the substrate being partially interrupted by an associated mask, the positioning of the mask in a plane parallel to the plane defined by the substrate being such that the material is deposited on the substrate in a thickness which increases substantially continuously in a direction along the substrate, and where the edge of the mask intersecting the further plane is within the area defined by  $H_1$ ,  $H_2$ ,  $C_2$  and  $C_1$  of Figure 2 of the accompanying ~~drawings.~~ drawings. each mask being closer to its associated source than to the substrate. and each mask being moveable. but not being moved in the course of the deposition process.
3. A process according to Claim 2, in which the edge of the mask intersecting the further plane is within the area defined by  $H$ ,  $C_2$  and  $C_1$ .

~~4. A process according to any one of Claims 1 to 3, where there are two or more sources depositing material simultaneously on a single substrate, each source being associated with a mask positioned as defined in Claim 1.~~

BEST AVAILABLE COPY